

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/LOCATION INSPECTED:

The University of Michigan
Phoenix Memorial Laboratory
2301 Bonisteel Boulevard
Ann Arbor, Michigan

REPORT NUMBER(S) 2015-001

2. NRC/REGIONAL OFFICE

Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

3. DOCKET NUMBER(S)

030-06958

4. LICENSE NUMBER(S)

21-00215-06

5. DATE(S) OF INSPECTION

6/16/15, with in-office review
through 6/29/15

LICENSEE:

The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

- ☒ 1. Based on the inspection findings, no violations were identified.
- ☐ 2. Previous violation(s) closed.
- ☐ 3. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.

Non-cited violation(s) were discussed involving the following requirement(s):

- ☐ 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.
(Violations and Corrective Actions)

Statement of Corrective Actions

I hereby state that, within 30 days, the actions described by me to the Inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

TITLE	PRINTED NAME	SIGNATURE	DATE
LICENSEE'S REPRESENTATIVE			
NRC INSPECTOR	Robert G. Gattone, Jr.	<i>Robert G. Gattone, Jr.</i>	6/30/15
BRANCH CHIEF	Aaron T. McCraw	<i>[Signature]</i>	7/1/15

Docket File Information**SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION**

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6. INSPECTION PROCEDURES USED

87122 and 87137

7. INSPECTION FOCUS AREAS

87122: 02.01, 02 and 02.04-02.05; 87137: 03.01, 03.02, and 03.03

SUPPLEMENTAL INSPECTION INFORMATION

1. PROGRAM CODE(S)

03521

2. PRIORITY

2

3. LICENSEE CONTACT

Mark Driscoll, RSO

4. TELEPHONE NUMBER

(313) 764-4420

☒ Main Office Inspection

Next Inspection Date: 06/16/2017

☐ Field Office Inspection☐ Temporary Job Site Inspection**PROGRAM SCOPE**

The in-office review included receipt and review of security information that was unavailable during the on site inspection. This special inspection included, in part, the licensee's removal of authorized sealed sources from the authorized irradiator and the transfer of the sources to a freight elevator that opened outdoors. The possession/control of the sources was transferred to an authorized entity (AE) when the sources were on the freight elevator that was opened to the outdoors and the AE prepared a package liner containing the sources for transfer to a truck. The licensee had periodically used the irradiator to irradiate samples that included human and animal tissues, filters, and polymers.

Performance Observations

The inspector: (1) observed that several licensee survey instruments were calibrated annually; (2) reviewed the record of a hot cell survey that was done before the Model 10-160B cask liner (liner) was placed into the hot cell and the results were negative; (3) observed that the licensee implemented its authorized "Cobalt-60 Rod Transfer" procedure; (4) observed authorized staff transfer the sources from the pool, through a transfer chute, to a table in the hot cell, and into the liner; (5) used a calibrated, NRC owned survey instrument to measure 0.08 milliroentgen per hour (mR/hr) at about 4 feet above the pool with all of the sources at the bottom of the pool, and 0.15 mR/hr at the hot cell exterior surface nearest to all of the sources; (6) independently verified that the licensee's source inventory was correct by viewing the sources from the hot cell; (7) observed that the sources were manipulated using time, distance and shielding to reduce exposure; (8) verified that the fork lift, pallet jack, and freight elevator that were used to move the loaded liner were rated above the weight of the loaded liner; (9) conducted a comparative survey and the inspector and the licensee measured 11 mR/hr at the open hot cell door at about 7 feet from the loaded liner; (10) observed the licensee conduct a removable contamination survey of the loaded liner and the results were negative; (11) observed the licensee measure a maximum of 90 mR/hr at 30 centimeters from the surface of the loaded liner; (12) observed the licensee move the loaded liner out of the hot cell using a pallet jack; (13) observed the licensee move the loaded liner into the freight elevator using the proper fork lift; (14) observed licensee staff don dosimeter badges as required; (15) reviewed dosimetry records showing that the highest annual whole body and extremity doses received by radiation workers since January 2013 were less than 10 millirem; (16) reviewed radiation protection program audit records for 2013 and 2014; and (17) noted that sealed source leak tests were conducted as required and the results were negative.